



# Remote Sensing Applications Division (RSAD)

## CDR Program Office

Weekly Report for March 30, 2012  
John J Bates, Chief



# CDR Program Office

## FY12 Climate Data Records

### Weekly Report – Mar 30, 2012

#### ① Mean Layer Temperatures – Univ of Alabama Huntsville (UAH)

- Completed – Nov 17

#### ② Sea Ice Concentration

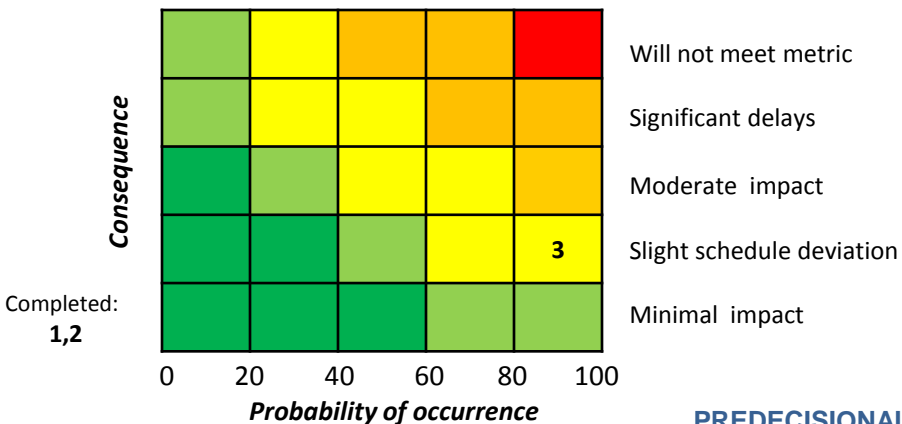
- Completed – Mar 28

#### ● ③ Northern Hemisphere Snow Cover

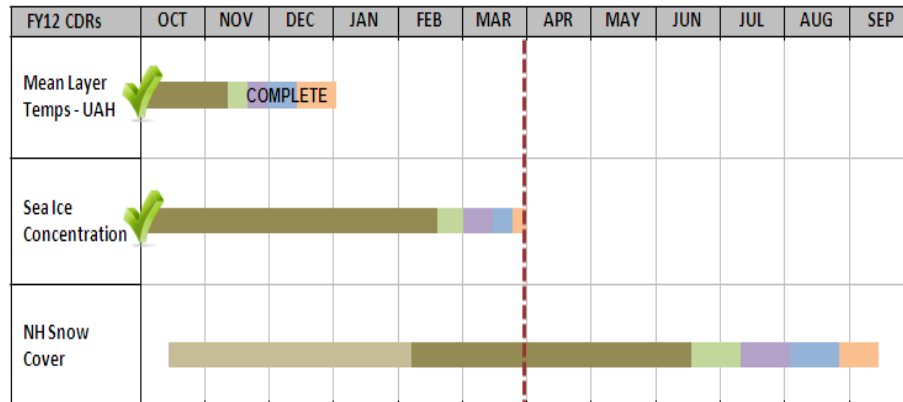
- Held telecon with PI, transition process progressing

● No change    ↑ Increasing Risk    ↓ Decreasing Risk    \*Candidate CDRs

### Risk Matrix



### R2O Schedule



R2O PHASE: ASSESSMENT SUBMISSION PREP TRANSFER VALIDATION ARCHIVE ACCESS

### Risk and Mitigation

- Went live with daily sea Ice product  
- Monthly product will be available in June
- Snow Cover PI has a lot to accomplish by the end of the FY  
- We will continue to transition the MLT-RSS CDR as a back-up

PREDECISIONAL DRAFT INFORMATION

# FY12 TCDR - Sea Ice

**CDR Product:** TCDR - Sea ice concentration, 1979-2007 (20 GB)

**GEOSS Societal Benefit:** Climate, Water, Ecosystems, Agriculture

## Project Status

- **Released daily sea ice CDR – ORR to follow**
- NSIDC will deliver the monthly product by the end of June

SOW in work for:

- 1) Adding F17 data to daily and monthly
- 2) Extending POR from 2008 – current
- 3) Quarterly updates for one year
- 4) QC tools and training
- 5) Quarterly access reports

## Next Action / Milestone

- Release daily CDR product (3/28) - done
- Create new monthly product (6/8)
- Archive new data and documentation updates (6/22)
- Add monthly product to web (6/29)



## Project Risks

- No Funding to separate the CDR (modularize production code)

ID	Task Name	Status	Start	Stop	FY11 Q4			FY12 Q1			FY12 Q2			FY11 Q3		
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Initial Assessment	100	12/7/2010	1/7/2011												
2	Transfer Prep	75	1/7/2011	5/30/2012	Daily								Monthly			
2a	Comment Source Code	95	4/15/2011	5/30/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	95	1/7/2011	5/30/2012												
2c	Convert data from binary to NetCDF	50	3/1/2011	5/30/2012												
3	Transfer Code, Docs, and Data	50	7/15/2011	6/8/2012												
4	Verify Code, Docs, and Data	50	7/31/2011	6/15/2012												
5	Archive Code, Docs, and Data	50	8/15/2011	6/22/2012												
6	Provide Access to Code, Docs, and Data	50	9/1/2011	6/29/2012												

PREDECISIONAL DRAFT INFORMATION

# FY12 TCDR - NH Snow Cover

**CDR Product:** TCDR – NH Snow Cover, 1966-2012 (10 GB)

**GEOSS Societal Benefit:** Climate, Water, Ecosystems, Agriculture, Energy

## Project Status

- Proceeding with transition
- PI sent sample code and flow chart  
– will send feedback by next week

SOW in work for:

- 1) Monthly updates for one year
- 2) QC tools and training

## Next Action/Milestone

- Letter to PI (10/14) - done
- Initial Assessment (2/9) – done



## Project Risks

- Funding SDS 2008 - SOW in development
- Input data is daily IMS data (made with a person in the loop)

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/9/2012												
2	Transfer Prep	0	2/6/2012	6/11/2012												
2a	Comment Source Code	0	2/6/2012	3/19/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0	3/19/2012	4/30/2012												
2c	Create NetCDF Dataset	0	5/30/2012	6/11/2012												
3	Transfer Code, Docs, and Data	0	4/18/2012	8/2/2012												
4	Verify Code, Docs, and Data	0	4/19/2012	8/16/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	8/24/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/10/2012												

# Backup FY12 CDR - Mean Layer Temperature - RSS

**CDR Product:** TCDR – Atmospheric Temperature at Four Layers, 1978-2011 (140 MB)

**GEOSS Societal Benefit:** Energy, Climate, Ecosystems

## Project Status

- Held IPT with PI on Tues
  - PI has worked on source code and flow chart
  - starting work on C-ATBD

SOW in work for:

- 1) Monthly updates for one year
- 2) QC tools and training

## Next Action/Milestone

- Initial Assessment (2/3) – done
- PI sends drafts: Documented code (3/19), Readme (4/2), Flow Diagram (4/9), C-ATBD (4/30)



## Project Risks

- Funding SDS 2008 - SOW in development

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/3/2012												
2	Transfer Prep	0	2/6/2012	6/4/2012												
2a	Comment Source Code	0	2/6/2012	3/19/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0	3/19/2012	4/30/2012												
2c	Create NetCDF Dataset	0	5/30/2012	6/4/2012												
3	Transfer Code, Docs, and Data	0	4/18/2012	7/26/2012												
4	Verify Code, Docs, and Data	0	4/19/2012	8/9/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	8/17/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/3/2012												

PREDECISIONAL DRAFT INFORMATION

# Backup FY12 CDR - Vegetation Bundle

**CDR Product:** TCDR – Vegetation Bundle, 1981-2012 (2.5 TB)

**GEOSS Societal Benefit:** Agriculture, Ecosystems, Climate, Biodiversity

## Project Status

- Initial Assessment complete  
- SME presenting results next Monday
- Potentially 2 Candidate CDRs
  - Surface Reflectance
  - Vegetation Index
  - Fractional Photosynthetically Active Radiation (FPAR) - beta
  - Leaf Area Index (LAI) - beta

## Next Action/Milestone

- Letter to PI (10/14) - done
- Initial Assessment (3/22) – done



## Project Risks

- Lots of work to be completed and PI is slow to respond to requests  
– could be a problem as a backup CDR for FY12

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Initial Assessment	60	10/17/2011	1/6/2012									
2	Transfer Prep	0											
2a	Comment Source Code	0											
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	0											
2c	Create NetCDF Dataset	0											
3	Transfer Code, Docs, and Data	0											
4	Verify Code, Docs, and Data	0											
5	Archive Code, Docs, and Data	0											
6	Provide Access to Code, Docs, and Data	0											

# Other CDR Discussion Items

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- MLT-UAH CDR: O&M for Christy has led to delivery of a new version (v6.0) instead of just updating the v5.4 POR. Initiated a change request (CR) for the new version. Drafted a SOW that also reflects these new deliverables.
- May be some conflicts between ARC funding and O&M funding in relation to duplication of effort.
- Andy said he can send an update for 2009, with new 2010 and 2011 data by the end of April – need archive POC. He also plans to create the C-ATBD, which should be available around the same time. He also mentioned a lot of users are coming to him for data, they are struggling with our interface – found that the CDR by itself is often not what the user is looking for, they also want the ancillary products that can only be found in the full HDF yearly files.
- Terry, Candace, and Dan are working on SOWs for IOC CDR maintenance.

# CDR Program Office

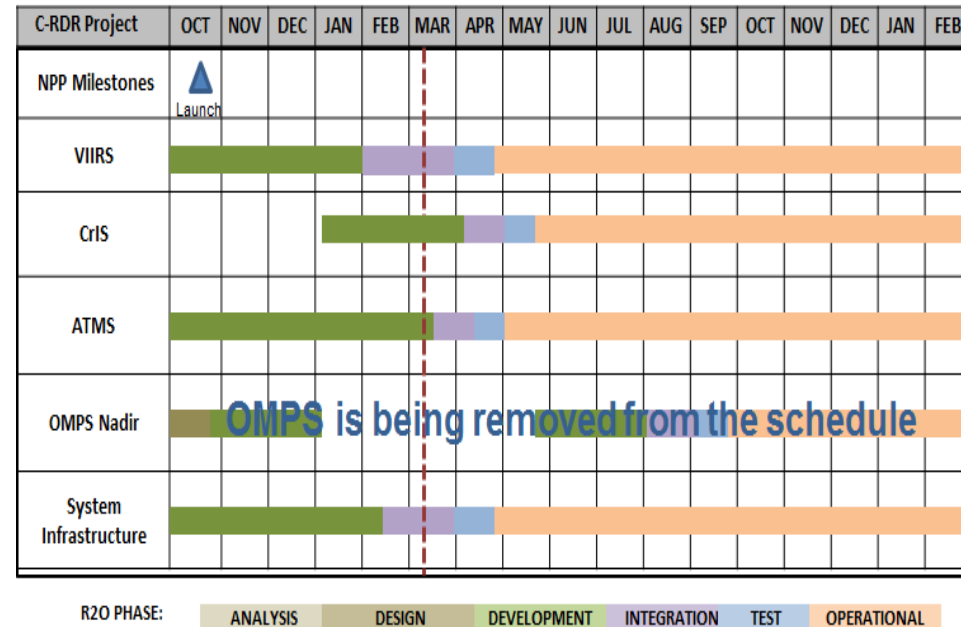
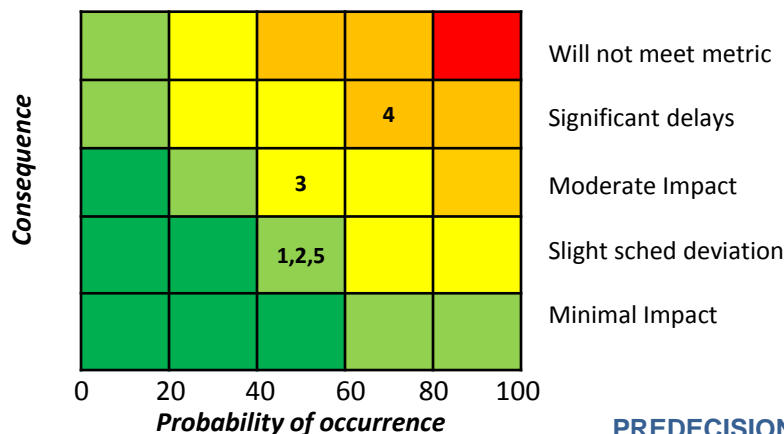
## NPP/JPSS Climate Raw Data Records (C-RDRs) Project

### Weekly Report – March 29, 2012

- ① **VIIRS**
  - Integrating the with the system infrastructure.
- ② **CrIS**
  - Developing code to write the CrIS C-RDR.
- ③ **ATMS**
  - Developing code to write the ATMS C-RDR.
- ④ **System Infrastructure**
  - Integrating with the VIIRS C-RDR.
  - Moving the system integration to the CICS network.
  - Completing XML style sheet for CrIS Product Specification.

● No change ↑ Increasing Risk ↓ Decreasing Risk

### Risk Matrix



### Risk and Mitigation

#### VIIRS, CrIS, ATMS, OMPS Nadir –

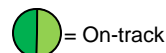
- Operational software is under maintenance, updated versions may affect C-RDR ported version.

#### System Infrastructure –

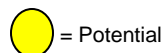
- Reliability of NPP RDRs from CLASS. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
- Ability of CLASS to handle the frequency and volume of NPP data. CLASS has been successful during system tests.
- Archive in CLASS is currently cost prohibitive. Need to identify alternate archive. Plan to store C-RDRs on HPSS until migration to CLASS.

PREDECISIONAL DRAFT INFORMATION

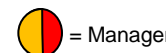
5/8/2012



= On-track



= Potential management action required



= Management attention required



# Visible Infrared Imaging Radiometer Suite (VIIRS)

**C-RDR Product:** Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format

**GEOSS Societal Benefit:** Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

## Project Status

- **Preparing for integration with system infrastructure.**
- **Modified the supporting data metadata.**
- Implemented and verified netCDF compression.
- Verifying (IDPS) documentation and code changes with DEWG.
- Wrote a test application to dump data from RDR APIDs.
- Completed writing science and spacecraft diary data.
- Completed test of code that writes VIIRS Support Data.
- Tracked down inconsistencies with PC files (docs vs code).
- Completed C-RDR Packer and UnPacker framework for VIIRS Supporting Data.
- Completed release of netCDF4 file creation toolset.

## Next Action / Milestone

- Integrating the VIIRS C-RDR software and the system infrastructure.



## Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

## Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	10/23/2009	5/4/2010												
2	Design	Completed	5/6/2010	1/5/2011												
3	Development	95.00%	1/6/2011	1/30/2012												
3a	Develop VIIRS processing component	95.00%	1/6/2011	1/12/2012												
3b	Test VIIRS processing component	95.00%	12/28/2011	1/30/2012												
4	Integration	10.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

PREDECISIONAL DRAFT INFORMATION

# Cross-track Infrared Sounder (CrIS)

**C-RDR Product:** Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format

**GEOSS Societal Benefit:** Climate, Water, Energy

## Project Status

- **Writing code for collecting and writing engineering data.**
- **Completing draft of CrIS C-RDR Product Specification .**
- Built and executing CrIS software in ADL 3.1.
- CrIS proprietary code issues have been resolved.
- Obtained the ADL version of the CrIS code.
- Developing code to create data structures for writing the C-RDR.
- Creating a MATLAB reader for the C-RDR to provide easy access.
- Evaluating processing of C-RDR with MATLAB and IDL
- Defining the netCDF4 structure for the C-RDR and developing software for writing the C-RDR.
- Ported operational algorithms (Space Dynamics Lab at Utah State)

## Next Action / Milestone

- Develop code to write CrIS C-RDR.



## Project Risks

- CrIS science algorithms not available to contractors: C-RDR team, cal/val teams, ADL developer cannot get CrIS SDR code. Government procured rights to the CrIS code.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Mitigated by using ADL.

## Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	8/16/2010	11/24/2010												
2	Design	90.00%	11/26/2010	2/15/2011												
3	Development (Phase 2)	30.00%	1/3/2012	4/7/2012												
3a	Develop CrIS processing component	60.00%	1/3/2012	3/8/2012												
3b	Test CrIS processing component		3/2/2012	4/7/2012												
4	Integration		4/2/2012	4/27/2012												
5	Test		4/30/2012	5/9/2012												
5a	Dry Runs		4/30/2012	5/8/2012												
5b	System Acceptance Test		5/9/2012	5/9/2012												
6	Operational		5/10/2012													

# Advanced Technology Microwave Sounder (ATMS)

**C-RDR Product:** Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format

**GEOSS Societal Benefit:** Climate, Water, Energy

## Project Status

- **Developing code to write science data.**
- **Writing initial draft of the ATMS Product Specification.**
- Working on ATMS C-RDR Product Specification.
- Testing the software framework for the Support Data Packer and Unpacker.
- Updating C-RDR data format.
- Defining the C-RDR format, contents, and metadata
- Identifying code and data structures required for C-RDR processing.
- Verified processing of ATMS algorithms
- IDPS ATMS algorithm executing in ADL at NCDC
- Obtained ported algorithms (SDL at Utah State)

## Next Action / Milestone

- Develop the code to produce the C-RDR.



## Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version.
- Developer shares time working NPP and branch management issues.

## Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Complete	10/29/2010	2/10/2011												
2	Design	95.00%	2/11/2011	4/29/2011												
3	Development	35.00%	5/2/2011	3/25/2012												
3a	Develop ATMS processing component	70.00%	5/2/2011	2/29/2012												
3b	Test ATMS processing component	5.00%	2/18/2012	3/25/2012												
4	Integration		3/26/2012	4/18/2012												
5	Test		4/19/2012	4/26/2012												
5a	Dry Runs		4/19/2012	4/25/2012												
5b	System Acceptance Test		4/26/2012	4/26/2012												
6	Operational		4/27/2012													

PREDECISIONAL DRAFT INFORMATION

# C-RDR System Infrastructure

**C-RDR Product:** Infrastructure to automate the production of the C-RDRs.

**GEOSS Societal Benefit:** None

## Project Status

- **Setting up the system infrastructure on the CICS network.**
- Setting up the system infrastructure on the Blade Center.
- **Defining and creating the C-RDR Virtual Machine environment.**
- Working on managing queues and processing jobs.
- Locating, validating, and statusing files for processing.
- Developing code for ingest detection and processing.
- C-RDR needs to handle CLASS manifests. SIPGenSys will not.
- Completed NPP 14 day Ground Operations Exercise (GOE).
- Completed throughput testing for SIPGenSys.
- Creating database tables and access procedures for config files.
- Setting up configuration files and software for the ingest test.

## Next Action / Milestone

- Integrating and testing the system infrastructure.



## Project Risks

- Need to develop an automated re-request mechanism for CLASS.

## Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	9/29/2010	4/22/2011												
2	Design	90.00%	4/25/2011	7/8/2011												
3	Development	80.00%	5/31/2011	2/28/2012												
3a	Develop infrastructure	90.00%	5/31/2011	2/14/2012												
3b	Test infrastructure	70.00%	9/27/2011	2/28/2012												
4	Integration (Phase 2)	5.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

PREDECISIONAL DRAFT INFORMATION